Listing of All Claims Including Current Amendments

1. (original) A method for improving a diagnostic or surgical procedure involving a variable direction of view endoscope with a variable line of sight comprising:

acquiring volumetric scan data of a subsurface structure;

positioning said endoscope relative to said subsurface structure;

acquiring internal endoscope configuration data;

establishing the position of said endoscope relative to said subsurface structure;

and

based on said volumetric scan data, said endoscope position data, and said internal endoscope configuration data, displaying representations of said subsurface structure and said endoscopic line of sight in their correct relative spatial relationship.

2. (original) The method of claim 1, further comprising:

displaying a representation of the rotational orientation of the endoscopic view.

3. (original) The method of claim 1, wherein said establishing endoscope position relative to said subsurface structure comprises:

correlating at least one endoscopic view with the corresponding region of said volumetric scan data by feature matching and identification; and

computing the relative position of said endoscope and said subsurface structure using said internal endoscope configuration data for each said endoscopic view and the

location of each said corresponding region obtained through said feature matching, and identification.

4. (original) The method of claim 1, further comprising:

selecting a target point relative to said volumetric scan data; and

instructing said endoscope to direct its line of sight towards said target point.

5. (original) The method of claim 1, further comprising:

selecting a path relative to said volumetric scan data; and

instructing said endoscope to direct its line of sight to follow said path.

6. (withdrawn) A method for improving a diagnostic or surgical procedure involving a variable direction of view endoscope comprising;

acquiring volumetric scan data of a subsurface structure;

selecting a target point relative to said volumetric scan data;

calculating a set of possible endoscope tip positions from which there is a direct line of sight to said target point; and

displaying said set of possible endoscope tip positions.

7. (withdrawn) The method of claim 6, further comprising:

selecting an entry line; and

calculating the intersection of said entry line with said set of possible endoscope tip positions.

8. (currently amended) A method for improving a diagnostic or surgical procedure involving a variable direction of view endoscope comprising:

acquiring volumetric scan data of a subsurface structure;

positioning said endoscope relative to said subsurface structure;

acquiring internal endoscope configuration data;

establishing the position of said endoscope relative to said subsurface structure;

computing the regions of said subsurface structure which can be viewed with said endoscope from its current position; and

displaying said regions.

9. (new) A method for improving a diagnostic or surgical procedure involving a variable direction of view endoscope with a variable line of sight comprising:

acquiring volumetric scan data of a subsurface structure;

positioning said endoscope relative to said subsurface structure;

acquiring configuration data of an internal view changing mechanism of the said endoscope;

establishing the position of said endoscope relative to said subsurface structure; and

based on said volumetric scan data, said endoscope position data, and said configuration data, displaying representations of said subsurface structure and said endoscopic line of sight in their correct relative spatial relationship.

10. (new) The method of claim 9, further comprising displaying a representation of the rotational orientation of the endoscopic view.

11. (new) The method of claim 9, wherein said establishing endoscope position relative to said subsurface structure comprises:

correlating at least one endoscopic view with the corresponding region of said volumetric scan data by feature matching and identification; and

computing the relative position of said endoscope and said subsurface structure using said configuration data for each said endoscopic view and the location of each said corresponding region obtained through said feature matching, and identification.

12. (new) The method of claim 9, further comprising:

selecting a target point relative to said volumetric scan data; and

instructing said endoscope to direct its line of sight towards said target point.

13. (new) The method of claim 9, further comprising:

selecting a path relative to said volumetric scan data; and

instructing said endoscope to direct its line of sight to follow said path.